# Christie PowerTool

## USER'S MANUAL

020-100035-03

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# 1 Introduction

## 1.1 Document Contents

This User's Manual includes the following sections:

- **Section 1 Introduction:**Outlines document contents and conventions.
- **Section 2 Installation and Setup:** Provides an outline of the installation requirements.
- **Section 3 Working with PowerTool:** Describes how to get started and work with PowerTool.
- **Section 4 PowerTool Interface:** Outlines the features of the interface and provides a detailed description of the procedures required to use the software.
- **Section 5 Backing Up Projector Settings:** Outlines how to back up and restore projector settings.

## 1.2 Document Conventions

The following text formats can be throughout the User Manual:

- KEYPAD COMMANDS/PC KEYSTROKES E.G., POWER, ENTER, CHANNEL
- *Content Reference e.g., Section 5 - Troubleshooting*
- ***Document Reference e.g., Using 3D in Mirage***
- **Figure/Table References e.g., Figure 2.1, Table 4.3**
- **Software Menus/Options e.g., Camera Settings, Screen Definition**
- **`On screen Messages`** e.g., **`No Signal`**
- OPERATIONAL STATES E.G., POWER, ON, OFF

## 1.3 Related Documents

All information included in this user manual is also included in the on-line help.

This manual covers the use of controls in the PowerTool interface. For information about supported functions for specific projector models, see the projector user manual.


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# 2 Installation and Setup

Christie PowerTool allows you to connect several projectors and manage their features, such as image, color, lamp, Picture-in-Picture, and system status.

## 2.1 Requirements

### 2.1.1 Recommended System

- PC running an Intel or 100% compatible processor
- Windows XP SP3+ (32-bit only) or Windows 7 (32- and 64-bit)
- 256 MB of free disk space
- 256 MB of RAM (512 MB recommended)
- An available Ethernet connection, either physical or wireless

**NOTE:** *When using a tablet PC, use Windows XP Tablet PC Edition 2005 SP2 or later.*

### 2.1.2 Projector Requirements

- One or more projectors running version 1.2f or later of the firmware
- Each projector must be running version 3.1.2.0 or later of the Xport firmware

**NOTE:** *To check firmware versions, press* MENU *on the projector control pad and select* 6 STATUS. *Check the version of Software and Ethernet SW respectively.*

### 2.1.3 Connection Requirements

#### Ethernet Connections:

- 1 network hub
- 1 Ethernet cable to connect the PC to the network hub
- 1 Ethernet cable per projector


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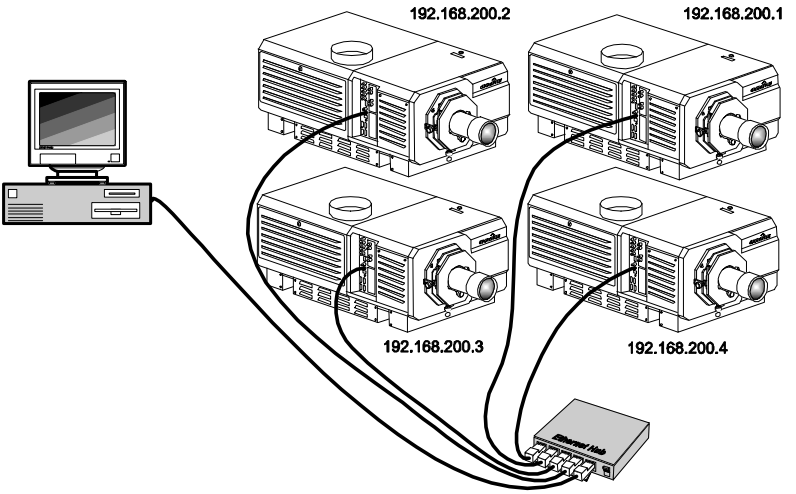


Figure 2-1 Ethernet Connection

## Wireless Ethernet Connections:

- 1 wireless network hub
- 1 wireless-enabled PC
- 1 Ethernet cable per projector

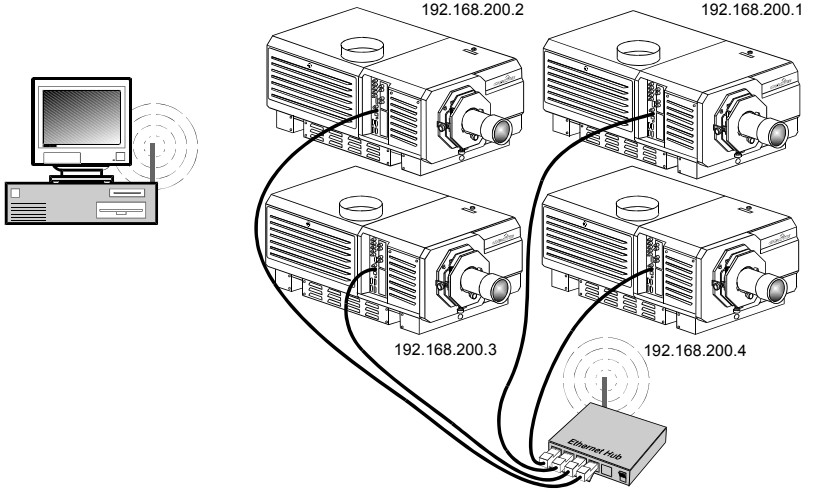


Figure 2-2 Wireless Ethernet Connection


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# 2.2 Software Installation

## 2.2.1 Install PowerTool Software

1. Insert the PowerTool installation CD to start the installation wizard application.
2. If the installation wizard does not start automatically, select **Start > Run**. In the **Run** dialog box, type *D:*\AutoRun.exe, where *D:* is the specific CD-ROM/DVD-ROM drive letter.
3. The **Christie PowerTool 2.1 Setup** window appears.
4. Click **Next**. Accept defaults and click **Next**. Click **Next**. The installation wizard installs any required third-party software, and then installs PowerTool.

## 2.2.2 Uninstall PowerTool

There are two different methods for uninstalling PowerTool, depending upon whether you are using Windows XP or Windows 7.

### Windows XP

1. Click **Start > Settings > Control Panel > Add or Remove Programs**.
2. In the **Add or Remove Programs** window, select **Christie PowerTool 2.1**, and click **Remove**.
3. When prompted to confirm uninstallation, click **Yes**.

### Windows 7

1. Click **Start > Control Panel > Programs and Features**.
2. In the **Programs and Features** window, select **Christie PowerTool 2.1**, and click **Uninstall**.
3. When prompted to confirm uninstallation, click **Yes**.


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# 3 Working with PowerTool

PowerTool provides a quick and convenient way to control selected projectors in a multi-projector array. PowerTool runs on PC or Tablet.

## 3.1 Starting the PowerTool Software

To start the software, click **Start > Programs > Christie > PowerTool > Christie PowerTool 2.1**.

The main PowerTool application window appears.

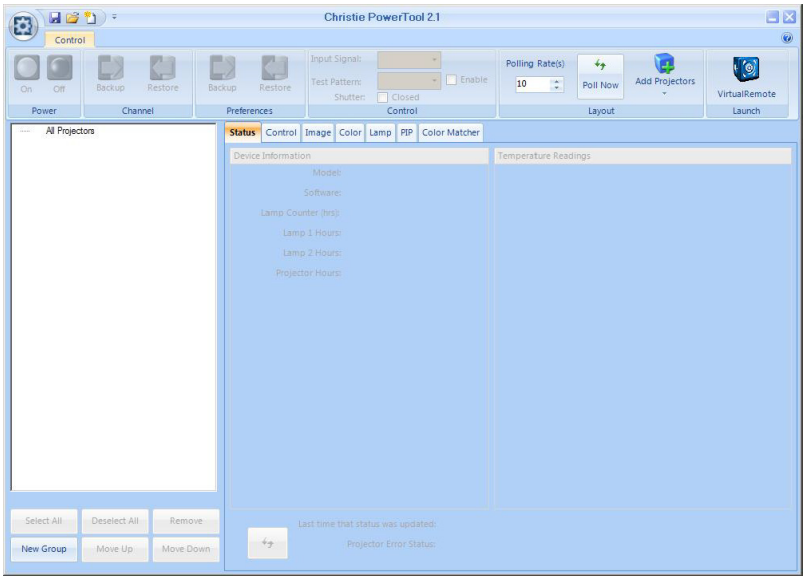


Figure 3-1 PowerTool Application Window


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# 3.2 Working With Configuration Files

The settings that you specify for your projectors can be stored for future use in PowerTool configuration files, so that you don't have to repeat setup that you have already done. When you launch PowerTool, there is a new, empty configuration already loaded. You can begin using this and save it later, or you can open an existing configuration that you have already created.

## 3.2.1 Open a Configuration File

1. Click the **PowerTool** button and select **Open**. You can also select a recently used configuration file by clicking it in the **Recent Documents** list.

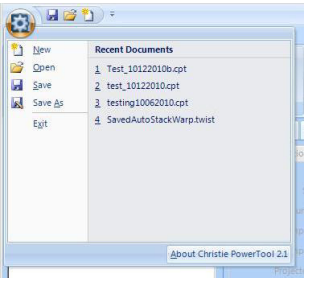


Figure 3-2 PowerTool Menu

2. Browse to and select the configuration file to load. Click **Open**.

   **NOTE:** *PowerTool automatically loads the projectors in the configuration file into the projector workspace. Red (Status Unknown) indicates projectors that are in an error condition, or projectors that are not connected as recorded in the configuration file.*

## 3.2.2 Save a Configuration File

1. To save the configuration file, click the **PowerTool** button and select **Save As**.
2. Browse to the folder where you want to save the file, specify a file name, and click **Save**.

# 3.3 Adding Projectors to the Configuration

You can use PowerTool to search for projectors for you, or you can add them to your configuration manually.


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Some types of projectors do not respond to the search feature and must be added manually. Also, a projector must be on the same subnet as your computer to be found automatically. See *Section 3.3.2 Add Projectors Manually*.

After adding a projector, you can place it into a group. For more information about groups, see *3.4 Projector Groups*.

## 3.3.1 Search for Projectors

1. To add projectors to the configuration by searching for projectors, click **Add Projectors**. The **Device Search** dialog box appears.

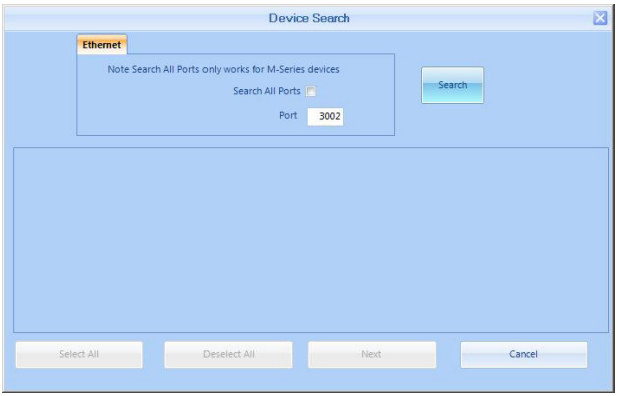


Figure 3-3 Device Search Dialog Box

2. To search all ports for devices, select the **Search All Ports** option. To search on a specific port, clear the **Search All Ports** option and specify the port in the **Port** field. Ensure that this field matches the port specified on the projectors. Remember the following:
   - For PowerTool to detect projectors, they must be plugged into the network.
   - Only connected projectors that are on the same subnet will be listed, as defined by your subnet mask.

   Listed projectors that are not responding to Ethernet communication will be noted with a **`COMM ERROR`** warning.

   A COMM Error may indicate:
   - The wrong port has been specified for the projector(s).
   - Network traffic may be high.
   - The projector may not be working properly.

   **NOTE:** *Auto detection may fail if some of the projectors have duplicate IDs or IP addresses. If no projectors are found, your router and/or*


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*firewall may not be configured correctly. If some projectors are found and others are not, you may have problems with one or more of the following: duplicate IDs or IP addresses, incorrect IP addresses, or incorrect firewall configuration.*

3. Click **Search**. PowerTool detects all the projectors that are connected.

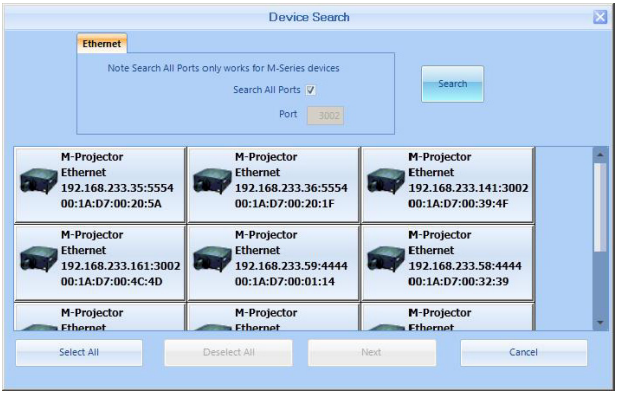


Figure 3-4 Projectors found

**NOTE:** *Projectors flagged with the message "***COMM ERROR***" have been detected, but are not responding to communication. They cannot be selected for configuration until the communication problem has been resolved.*

4. Click a projector to select it. To deselect it, click it again. To select all of the projectors shown, click **Select All**. To clear your selection, click **Deselect All**.
5. Click **Next** to add the projectors to the configuration. Projectors are added in the order they are selected.


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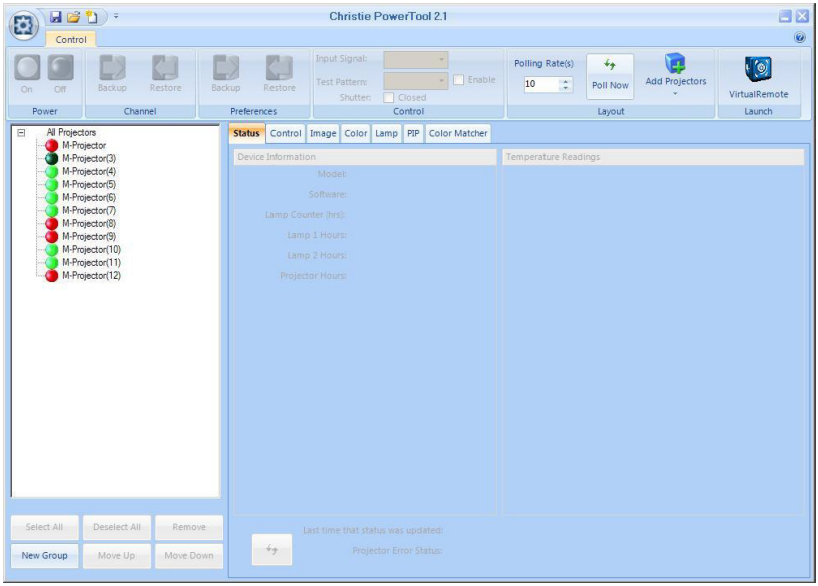


Figure 3-5 Projectors added to the configuration

6. Use the group commands below the projector list to organize the projectors. For more information, see *Section 3.4 Projector Groups*.

## 3.3.2 Add Projectors Manually

If you know the IP address and port number of a projector, you can add it manually instead of having PowerTool search for the projector.

To add a projector manually:

1. Click the **Add Projectors** arrow button and then click **Manual** on the drop-down menu. The **Manual Add** dialog box appears.

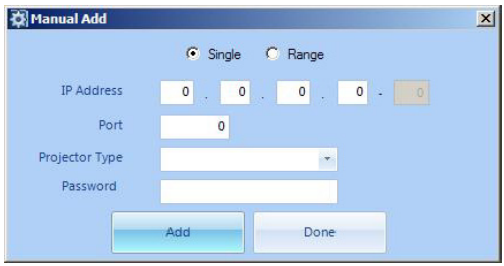


Figure 3-6 Manual Add Dialog Box

2. To add one projector at a particular IP address, select **Single**. To add several projectors at a range of IP addresses, select **Range**.


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3. Specify the **IP Address** and **Port** (or range of ports) where the projector(s) is located.
4. Select a **Projector Type** from the drop-down list.

   **NOTE:** *You must enter a projector type for PowerTool to connect to the projector.*
5. If the projector you are adding requires a password, enter a **Password**. Click **Add**.

   PowerTool searches for the projector(s) and, if found, adds them to your configuration.
6. When you are finished adding projectors manually, click **Done** to close the dialog box.
7. Use the group commands below the projector list to organize the projectors. For more information, see *Section 3.4 Projector Groups*.

## 3.4 Projector Groups

PowerTool allows you to create groups into which you can organize your projectors. Groups make it easier to look for projector status information and send commands to several projectors at once. For example, you might want all projectors of a particular type grouped together. Alternatively, if you are managing a large collection of projectors housed in different areas, you might want all projectors in a given room or building grouped together.

The projector workspace shows the projector groups organized in a tree-view, hierarchical structure. Below the workspace are a series of buttons for performing different tasks with the groups.

Projectors can exist at the **All Projectors** level; they do not need to belong to a group.

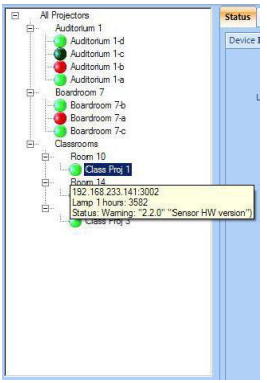


Figure 3-7 Projector Groups


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### 3.4.1 Create Groups

To create a group:

1. Click the location in the tree structure where you want to create the group.
2. Click the **New Group** button, or right-click the selected location and click **New Group**.
3. Type the name of the group in the highlighted area and press ENTER or click in another area.

### 3.4.2 Remove Groups or Projectors

You can delete groups or projectors from your configuration if they are no longer needed.

**NOTE:** *If you want to delete a group but keep the projectors in that group, then move the projectors to another group first before deleting the group.*

To remove groups or projectors:

1. Click the groups or projectors that you want to remove. To select more than one, hold down the CTRL key while clicking the groups or projectors. Select all or none by clicking **Select All** or **Deselect All**.
2. Click the **Remove** button or press DELETE.
3. When prompted to confirm, click **Yes**.

### 3.4.3 Move Groups or Projectors

To move groups or projectors:

1. Click the groups or projectors that you want to move. To select several groups or projectors, hold down the CTRL key while clicking them. To select a range, click the first one, hold down the SHIFT key, and click the last one.
2. Drag the groups or projectors to a new location. Alternatively, hover over the group or projector you want to move, right-click, and select **Move To Group**. Select all or none by clicking **Select All** or **Deselect All**. When prompted to confirm, click **Yes**.
3. To move the selected groups or projectors up or down in the tree hierarchy, click **Move Up** or **Move Down**.


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### 3.4.4 Rename Groups or Projectors

To rename a groups or projector:

1. Right-click the group or projector that you want to rename.
2. Click **Rename** in the menu that appears.
3. Type a new name in the highlighted area and press ENTER or click in another area.

## 3.5 Controlling Projectors

### 3.5.1 Select a Projector and View Settings

To select a projector, click it in the projector workspace. The functions and options available for that projector are immediately activated in the PowerTool ribbon and in the projector control tabs, while unsupported functions and options are grayed out. In the **Status** tab, the current settings and readings for the projector appear. (See Figure 3-8 on page 3-9).

You can also view some basic status for a projector by hovering the arrow over the projector in the workspace.

To select multiple projectors, hold down the CTRL key while clicking groups or projectors. To select a range, click the first one, hold down the SHIFT key, and click the last one. When you have selected multiple projectors, only the commands or settings common to all selected projectors are available. On the **Status** tab, only the readings common to all selected projectors are displayed.


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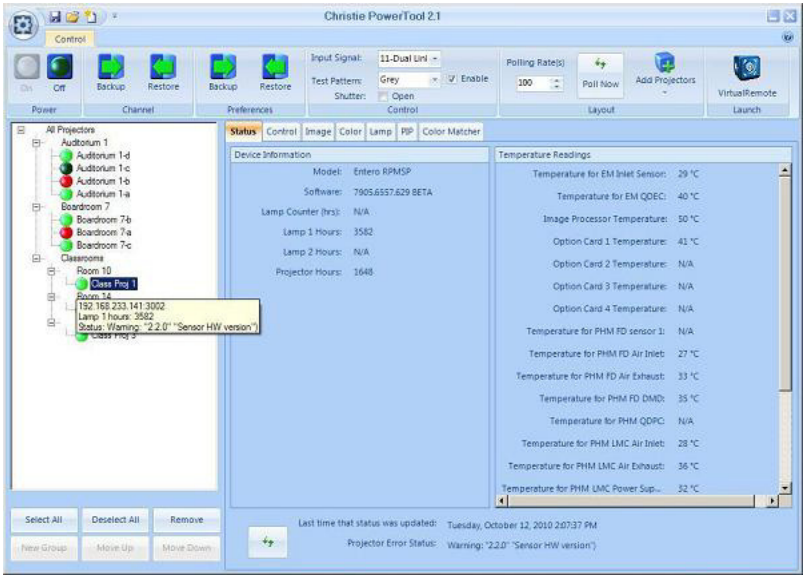


Figure 3-8 Projector Screen Selection

**NOTE:** *Controls, such as check boxes and drop-down lists, have 3 states: selected (all projectors), cleared (none of the projectors), and orange background (some of the projectors).*

## 3.5.2 Change Settings

1. Select the projectors you want to work with.
2. Click the tabs beside the projector workspace to access projector controls. Functions that apply to all the selected projectors are enabled.
3. Work with the controls to change the settings. Changes are sent to the selected projectors in real time.

See *4 PowerTool Interface* for information about the individual PowerTool controls. See the projector user manual for details about supported functions for your projector.

# 3.6 VirtualRemote

VirtualRemote is a software application that emulates the functionality of the projector remote keypad. Click the buttons on the virtual remote to select functions as you would press the buttons on a real remote keypad. The commands are sent to the selected projector(s).


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If you have multiple projectors selected, you can control all of them with VirtualRemote as long as they are all of a similar type.

To access VirtualRemote:

1. Select the projector(s) you want to work with.
2. Click **Launch > VirtualRemote** in the **Control** ribbon.
3. If PowerTool can find the projectors you selected, the Projectors Connected dialog box appears, showing you the projectors that you will be controlling with VirtualRemote. Click **OK**. The VirtualRemote window appears.

   **NOTE:** *VirtualRemote is supported if your projector remote looks like one of the two examples in Figure 3-9.*

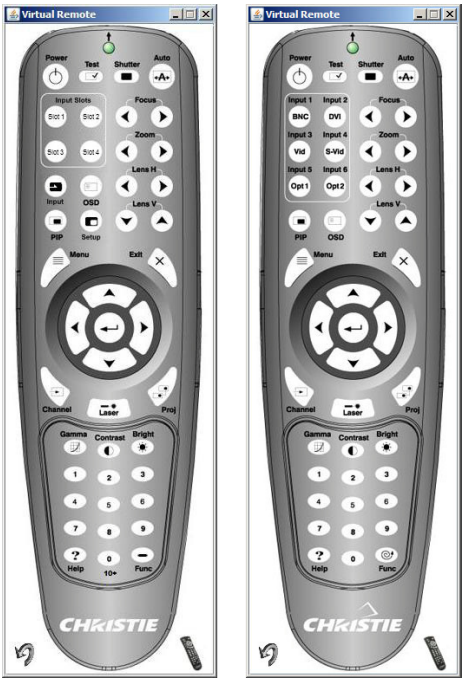


Figure 3-9 VirtualRemote Windows, Showing Two Types of Remote

4. If you did not select any projectors, the **Communication Setup Wizard** dialog box appears.


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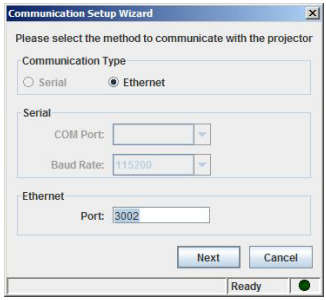


Figure 3-10 Communication Setup Wizard

5. Specify the **Port** number where the projector is located, and click **Next**. The **Device Selection List** dialog box appears.

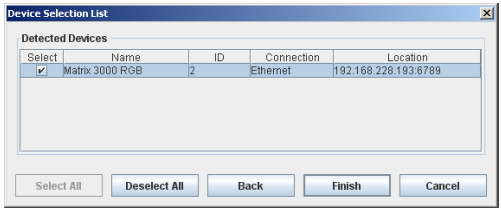


Figure 3-11 Device Selection List

6. Select the projector(s) you want to work with, and click **Finish**.
7. Click the buttons on the virtual remote to select functions as you would press the buttons on a real remote keypad. The commands are sent to the selected projectors. To rotate the VirtualRemote window counter-clockwise, click the rotation button in the lower-left corner of the window. Click it again to rotate back.


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# 4 PowerTool Interface

PowerTool provides access to projector functions using a visual interface.

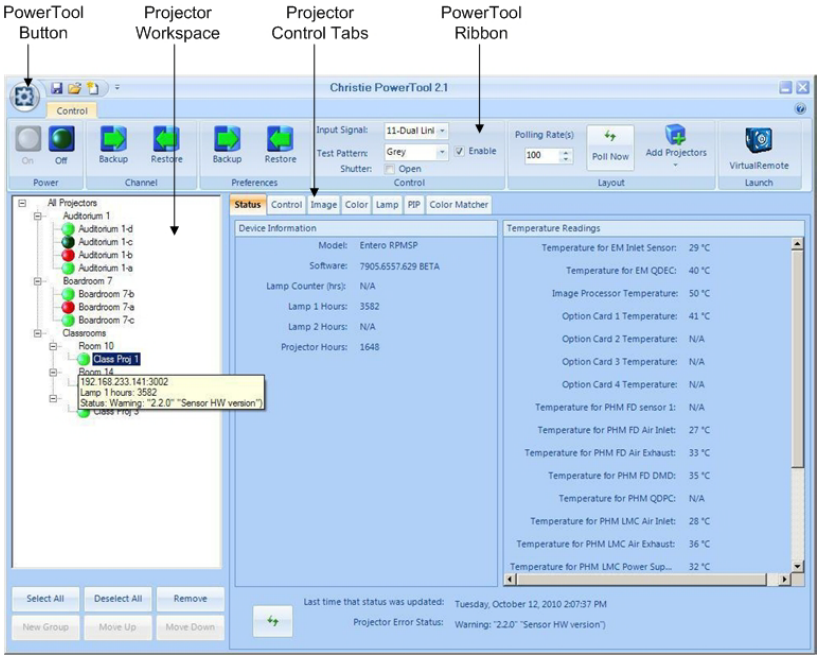


Figure 4-1 PowerTool Interface

PowerTool is used with various Christie projectors.

See the projector user manual for projector-specific information about supported functions.

Functions such as Auto Setup can be used with a single or multiple selected projectors at once. Functions such as Status apply to only a single projector at a time.

## 4.1 PowerTool Menu

The PowerTool menu provides access to Windows standard file management functions. To access the PowerTool menu, click the **PowerTool** button.


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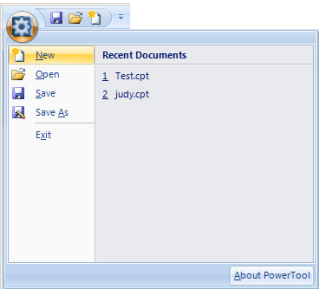


Figure 4-2 PowerTool Menu

## 4.2 PowerTool Ribbon

The **Control** tab on the tool ribbon provides quick access to the most commonly used controls. Other options are grouped by function under the tabs in the PowerTool window.

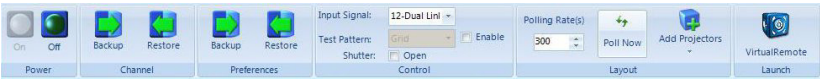


Figure 4-3 PowerTool Ribbon, Control Tab

**Power – On/Off** turn the selected projectors on or off. When powering on or off, the status lights of the affected projector(s) turn medium green and the ON/OFF buttons for the affected projector(s) are disabled until the cycle is complete.

If multiple projectors are selected, but only some of them are on, both buttons are available. Clicking the **On** button powers up the selected projectors that are not already on.

When turning a projector on, you might be prompted to confirm this action.

**Channel – Backup / Restore** back up and restore channel settings for the selected projector(s). See *Section 5.1 Back Up Projector Channels or Preferences*.

**Preferences – Backup / Restore** back up and restore projector preferences for the selected projectors. See *Section 5.1 Back Up Projector Channels or Preferences*.

### Control Panel

**Input Signal –** Sets the input source for the selected projectors. If multiple projectors are selected, only the sources that are common to all the selected projectors are included in the list. See the projector manual for information about supported input sources.


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**Test Pattern –** Identifies the test pattern to display during setup or troubleshooting. This option is enabled for supported projectors only.

**Enable –** When selected, enables the selected test pattern on the selected projector(s). The test pattern displays instead of the media from the input source.

**NOTE:** *If multiple projectors are selected and only some of them are shuttered, the check box remains unselected.*

**Shutter –** Opens and closes the shutter for the selected projector(s). Select the check box to close the shutter. Clear it to open the shutter.

### Layout Panel

**Polling Rate –** Specifies the rate (in seconds) at which PowerTool sends a status request to all the projectors in the configuration. PowerTool polls one projector at a time, and then polls the next projector at this interval.

When you first launch PowerTool with no projectors added, this value defaults to 60. When the number of projectors you have added exceeds 6, the polling rate is reset to 10 times the number of projectors.

You can specify a larger value; for example, you might want to increase this value if you have a large number of projectors and you are concerned about network traffic. However, you cannot specify a value less than 60 or 10 times the number of active projectors, whichever value is larger.

This setting should only be changed by experienced system administrators.

**Poll Now –** Click to begin to poll your projectors immediately. PowerTool polls one projector at a time, and then polls the next projector at a rate set by the **Polling Rate** setting.

**Add Projectors –** Allows you to add projectors to your configuration. See *Section 3.3 Adding Projectors to the Configuration*.

### Launch

**VirtualRemote –** Opens the virtual remote keypad so that you can control the selected projector(s) using the familiar keypad layout. If you have multiple projectors selected, you can control all of them with VirtualRemote as long as they are all of a similar type. For more information, see *Section 3.6 VirtualRemote*.


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# 4.3 Projector Workspace

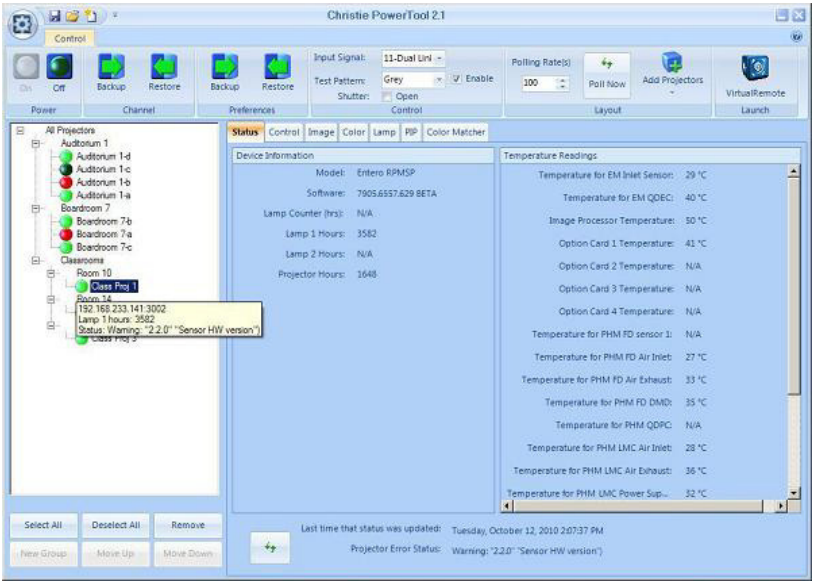


Figure 4-4 Projector Workspace

The projector workspace shows all of the projectors you have configured in PowerTool and the groups that you have organized them into.

Each projector has a color-coded icon that indicates status:

**Light Green –** The projector is powered on and PowerTool is communicating with it.

**Red –** PowerTool is not communicating with the projector or the projector has some other error status.

**Dark Green –** The projector is powered off.

# 4.4 Projector Control Tabs

The tabbed controls give access to projector options grouped by function.

See the projector user manual for projector-specific information about supported functions and options.

## 4.4.1 Status Tab

The Status tab shows a variety of data about the projector. This tab is only available if one projector is selected in the projector workspace.


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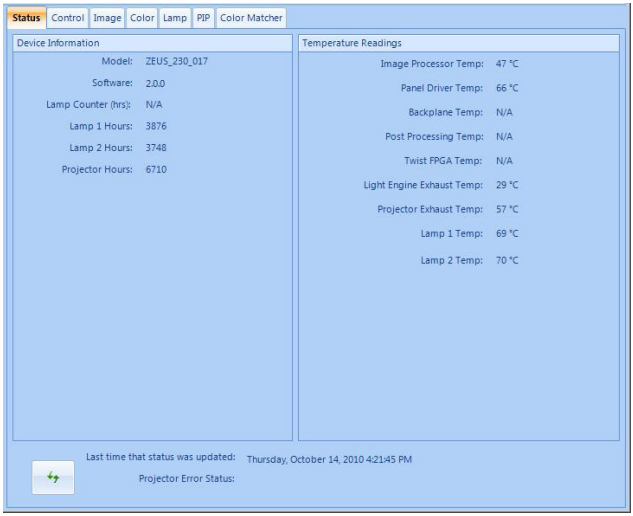


Figure 4-5 Status tab

**Device Information –** Identifies the selected projector's model name/number and the installed firmware, and tracks the operation hours for the lamp(s) and projector.

**Temperature Readings –** Indicates the current operating temperatures for various components in the projector chassis.

**Last time that status was updated –** Show the date and timestamp of the last status update. To retrieve status information immediately, click the refresh button.

**Projector Error Status –** Shows a warning or error, if the selected projector has one. If there is an error, the selected projector will be highlighted in red in the tree view.


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## 4.4.2 Control Tab

Figure 4-6 Control Tab

### Information

These fields are disabled when multiple projectors are selected.

**Projector Name –** Identifies the selected projector by name. This is a PowerTool reference only and is not stored on the projector.

**Projector ID –** Identifies the selected projector's ID number.

**Connection –** Identifies the selected projector's IP address/COM port.

### Source

**Auto Setup: –** Optimizes settings for the current source. Auto Setup will override settings you may have adjusted. **Table 4.1** outlines the Auto Setup changes. PowerTool will prompt you to confirm that you want to use Auto Setup. You must have an unlocked channel present to use Auto Setup. If multiple projectors are selected, Auto Setup will be run on each selected projector in succession. Failures will be reported. Auto Setup is not available if the selected Input Signal source is inactive.

**Table 4.1 Auto Setup Settings**

| | |
|---|---|
| Pixel tracking | Contrast |
| Pixel phase | Brightness |
| Size and blanking | Auto input level (Off) |
| Vertical stretch | Detail (if video source) |
| Position | Filter |
| Input levels | Luma delay |


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### Lens

Depending on the projector model, either the arrow buttons or the sliders are enabled to adjust settings.

**NOTE:** *You can only use lens control settings on one projector at a time.*

**Enable Lens Control –** When selected, you can control the lens on the selected projector using the settings below.

**Focus –** Adjusts lens focus to improve the clarity of the image (◀ to decrease focal distance, or ▶ to increase focal distance). Click the button for a small adjustment or click and hold for continuous adjustment. If multiple projectors are selected, focus changes are relative to each projector's current settings.

**Zoom –** Adjusts the image size to fit the screen (◀ to zoom out, or ▶ to zoom in). If multiple projectors are selected, zoom changes are relative to each projector's current setting.

**Horizontal –** Adjusts the horizontal lens offset (◀ to move the image to the left, or ▶ to move the image to the right).

**Vertical –** Adjusts the vertical lens offset (▲ to move the image up, or ▼ to move the image down).

**NOTE:** *When using a hand-held tablet, tapping a control and holding will activate a context menu. For continuous adjustment, either tap repeatedly, or gently rub back and forth on the control. Alternatively, you can turn* OFF *the right-click functionality in the tablet's configuration.*

## 4.4.3 Image Tab

### Auto Levels

The Auto Levels tab continuously monitors the input signal levels and makes adjustments as necessary to prevent crushing. The projector can automatically optimize levels for all but the most unusual of sources. Input levels can only be adjusted for one projector at a time. The Auto Levels tab is not available when multiple projectors are selected. If a test pattern has been enabled, you will not be able to adjust the image.


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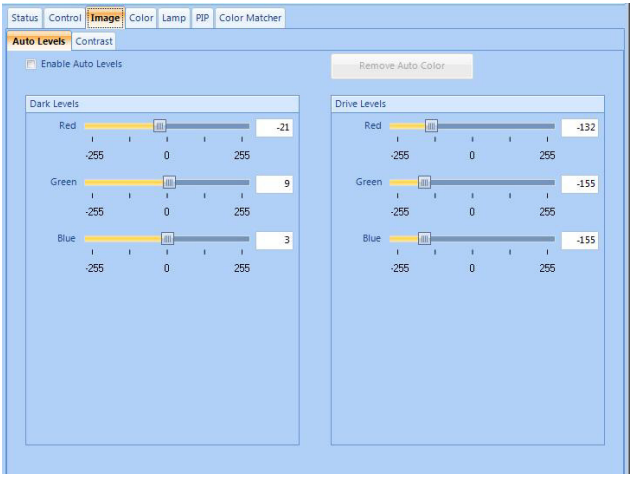


Figure 4-7 Auto Levels

**Enable Auto Levels –** When selected, automatically adjusts the **Dark Levels** and **Drive Levels** for the source specified on the **Control** tab, disabling these controls as well. You might use this feature if one of your signals is weaker than normal for one particular color.

Before beginning, check that overall contrast and brightness settings are near 50 and color temperature is properly set up on an internal gray scale test pattern.

For best results, use an image that has some 100 percent black and 100 percent white in it. Leave this control OFF after use. Auto levels applies to BNC and DVI-A sources only.

**Dark Levels – Red/Green/Blue –** Indicates the dark levels of each color for the specified source on the selected projector.

**NOTE:** *You should only adjust dark and drive levels manually if you are an experienced user. You might choose to manually adjust dark levels is you have a noisy source that shows black level spikes. You can use these settings to compensate for differences in sources and cabling, allowing you to perfect the source image input levels and eliminate "overshoot" and "undershoot".*

**Drive Levels – Red/Green/Blue –** Drive Levels are of limited use with digital signals, but do offer some ability to tweak poorly mastered source materials.

**Remove Auto Color –** Click this to display all colors (white) again. When you adjust one color, the projector temporarily displays only that color so that you can match it correctly. When you are satisfied with your color adjustment, click this button to display all colors again.


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## Contrast

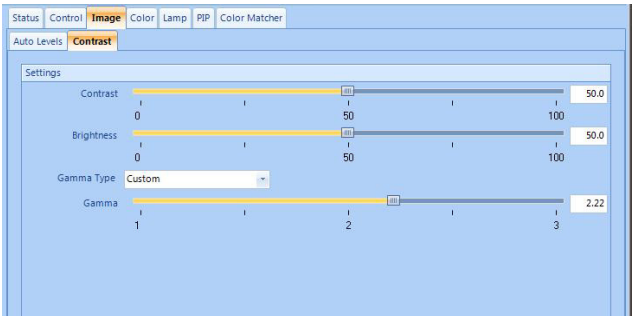


Figure 4-8 Contrast

**Contrast –** Increases or decreases the perceived difference between light and dark areas of your image (0-100). For best results, keep close to 50. If contrast is set too high, the light parts of the image lose detail and clarity. If the contrast is set too low, the light areas will not be as bright as they could be and the overall image will be dim. For best results, start with a low value and increase so that whites remain bright, but are not distorted or tinted, and that light areas do not become white (i.e., are "crushed"). If the environment lighting changes, an adjustment of Gamma is recommended (see below). This control is not available when multiple projectors are selected, if a test pattern is running, or if there is a video signal error.

**Brightness –** Increases or decreases the amount of black in the image (0 to 100). For best results, keep close to 50. Start with a high value and decrease so that dark areas do not become black (i.e., are "crushed"). Conversely, high brightness changes black to dark gray, causing washed-out images. This control is not available when multiple projectors are selected, if a test pattern is running, or if there is a video signal error.

**Gamma Type –** Identifies the gamma curve used for gamma adjustments: Standard, 2.22, or custom.

**Gamma –** Determines what gray shades are displayed between minimum input (black) and maximum input (white) for all signals. A good gamma setting helps to optimize blacks and whites, while ensuring smooth transitions for the "in-between" values utilized in other colors. Unlike Brightness and Contrast controls, the overall tone of your images can be lightened or darkened without changing the extremes. All images will be more vibrant, while still showing good detail in dark areas.


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Gamma is used to fine-tune the gamma table currently in use, ranging from 1 to 3. If excess ambient light washes out the image and it becomes difficult or impossible to see details in dark areas, lower the gamma setting to compensate. If the image is washed out and unnatural, with excessive detail in black areas, increase the setting. In high ambient light conditions, lower gamma may produce better results than higher gamma. Gamma of 2.2 (default) indicates the gamma table has not been adjusted.

Manual gamma adjustment is enabled when Gamma Type is set to Custom.

## 4.4.4 Color Tab

The contents of the **Color** tab change depending on the output color selection.

**Output Color –** Allows you to specify the output color mode.

The selections include:

**Max Drives –** Drives all three colors at their maximum level so that they are fully on and cannot be changed.

**Color Temperature –** Enables the color temperature selection control.

**SD Video –** Optimizes color for standard video sources. Colors cannot be adjusted.

**HD Video –** Optimizes color for high definition video sources. Colors cannot be adjusted.

**User 1–4 –** Enables user defined color adjustments.

**Enable Auto Color**When enabled, this control allows the projector to continuously monitor the input signal levels of the analog inputs and make adjustments as needed. This options is available for BNC and Dual DVI inputs. Checking this option disables all other controls on the Color tab.

### Max Drives/SD Video/HD Video

Max Drives turns all the colors to their maximum level.

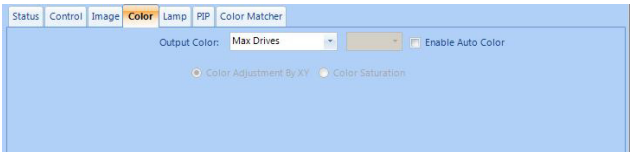


Figure 4-9 Color Settings


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## Color Temperature

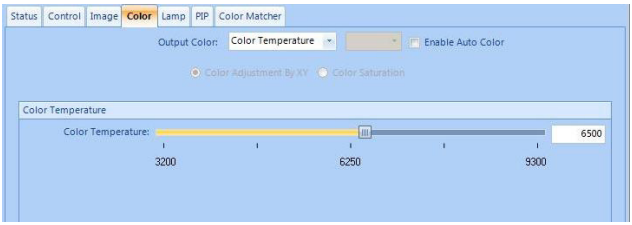


Figure 4-10 Color Temperature

**Color Temperature Slider –** This selection allows you to specify color gamut by selecting an accurate color temperature. Color temperatures are expressed in degrees Kelvin (3200-9300K) and utilize different combinations of the projector's original native color primaries to produce a "coloration" or cast (reddish or bluish) in images—the higher the temperature, the more reddish the cast; the lower the temperature, the more bluish the cast. This option is available only if you have a source connected and have selected **Color Temperature** from the **Output Color** drop-down list.

## User 1–4

Figure 4-11 User-Defined 1–4


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**Output Color - Color –** Identifies the color to be adjusted. This feature is enabled for User 1–4 color adjustments only.

**Color Adjustment by XY –** Select this feature to enable the Color XY sliders to adjust the color specified in the **Output Color** drop-down. It allows you to define Red, Green, Blue and White by defining their RGB components. This feature is enabled for User 1–4 color adjustments only.

**Color Saturation –** Select this feature to enable the **Color Saturation** sliders. This feature is enabled for User 1–4 color adjustments only

## 4.4.5 Lamp Tab

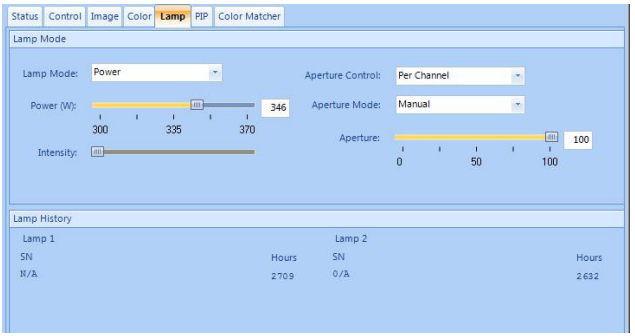


Figure 4-12 Lamp tab

### Lamp Mode

**Lamp Mode –** Indicates the lamp usage mode that regulates the lamp's power and light output.

**Max brightness –** The lamp burns as brightly as possible, driven by 100% of the power level rating for the installed lamp. Maximum brightness for any lamp gradually diminishes with age and images become dimmer over time. The lamp's current output level is reflected in the Intensity control.

**Intensity –** Brightness remains close to the specified level for as long as possible. If you select this option, you must also set the desired intensity level using the Intensity control. The projector will automatically adjust power as needed to maintain this intensity as closely as possible.

**Power –** Power supplied to the lamp will remain at the specified wattage level. If you select this option, you must also set the power level using the **Power (W)** control.


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**Power (W) –** Indicates the lamp power level in watts. The range depends on the projector model. This control is enabled when you select **Power** from the **Lamp Mode** drop-down list.

**Intensity –** Indicates the light intensity setting for the lamp. The range is 0-9999. Note that the intensity value is a correlation only and does not represent a lumens level. This control is enabled when you select **Intensity** from the **Lamp Mode** drop-down list.

**Aperture Control –** Adjusts the optical aperture inside the projector. The optical aperture inside the projector controls the diameter of the opening to the lens, controlling the amount of light leaving the projector. With a fully open aperture, the maximum amount of light passes through for maximum brightness. Reduce the aperture diameter to increase contrast ratio. This control is enabled when you select **Intensity** from the **Lamp Mode** drop-down list. Depending on the projector model, either the up and down buttons or the slider are enabled to adjust settings.

**Off –** Turns aperture control off.

**Manual –** Allows you to control it manually. Move the slider back and forth to adjust the aperture, or enter a value from 0 to 100.

**Per Channel –** Allows you to control it per channel.

**Aperture Mode –** Adjusts the aperture mode. This control is enabled when you select **Per Channel** from the **Aperture Control** drop-down list. Depending on the projector model, either the up and down buttons or the slider are enabled to adjust settings.

**Off –** Turns aperture control off.

**Manual –** Allows you to control it manually. Move the slider back and forth to adjust the aperture, or enter a value from 0 to 100.

**Dynamic –** Allows you to control it dynamically.

**NOTE:** *If the selected projector can store the aperture setting, then this control displays as a slider.*

## Lamp History

Lists the lamps most recently installed and recorded in the projector. Lamp history automatically updates whenever you record a new lamp serial number—the new lamp is added to the bottom of the list.


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## 4.4.6 PIP (Picture-in-Picture) Tab

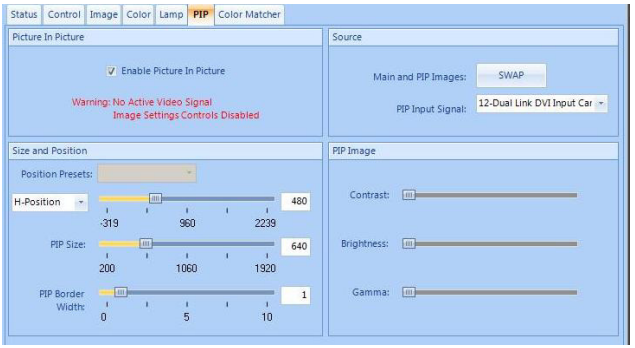


Figure 4-13 PIP

### Picture in Picture

**Enable Picture in Picture –** •Activates the PIP window and enables the controls on the tab. PIP functions only when you have an active signal and are not running a test pattern. If you have no active signal, the following warning is displayed (**`No Active Video Signal/ Image Settings Controls Disabled`**) and the PIP Image controls are disabled.

### Size and Position

**Position Presets –** Allows you to set the position of the PIP window:

- Top Left
- Top Right
- Bottom Left
- Bottom Right
- Custom
- Picture By Picture (places the two windows side by side)

**H-Position/V-Position –** Indicates the horizontal/vertical position of the picture-in-picture window. The range is a number in pixels. This control is enabled when you select the **Custom** option from the **Position Presets** list.

**PIP Size –** Indicates the width of the PIP window in pixels. The height of the window is determined using the default aspect ratio of the input image. This control is enabled when you select the **Custom** option from the **Position Presets** drop-down list.


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**PIP Border Width –** Indicates the width of the border around the PIP window.

## Source

**Main and PIP Images SWAP –** Switches the images displayed of the main screen with the PIP window.

**PIP Input Signal –** Allows you to specify the source for the PIP window. Two sources on the same decoder can result in a conflict. For best PIP or Seamless Switching results when composite and S-video signals are on the same decoder, use two different signal types.

The selections include:

- BNC
- DVI-I
- Composite
- S-Video
- Option slot #1
- Option slot #2

**NOTE:** *Interlaced sources are not recommended for PIP.*

### Tips for using PIP or Seamless Switching:

- When using two digital signals or one analog and one digital, each must be <165 MHz.
- When using two analog signals, each must be <90MHz.
- Avoid using an interlaced source in the PIP window.
- Seamless switching may affect image quality in some cases.

## PIP Image

Brightness, contrast, and gamma for the PIP image behave in the same way as brightness, contrast, and gamma for the main image. For details, see *Contrast* on page 4-9.


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## 4.4.7 Color Matcher Tab

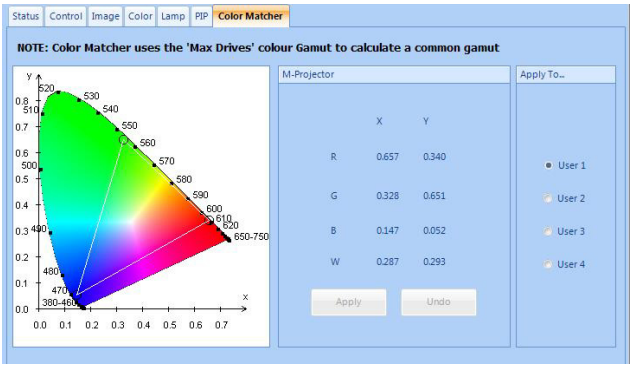


Figure 4-14 Color Matcher

**Color Gamut Graph –** Visually identifies the color gamut described by the chart.

**Color Gamut –** Identifies the color gamut.

- For a single selected projector, identifies the color gamut stored at user locations 1 through 4. Values reflect the User location selected.
- For multiple selected projectors, calculates the common gamut that can be supported by the selected projectors. If applied, the values will be stored at the selected User location.

**User 1-4 –** Identifies the User location where the color gamut values are stored.

**Apply –** Sends the calculated common gamut values to the selected User location on the selected projectors. This option is available when multiple projectors are selected.

**Undo –** Restores the color gamut values that were in use prior to applying the common gamut. This option is available immediately after applying a common gamut.


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# 5 Backing Up Projector Settings

## 5.1 Back Up Projector Channels or Preferences

1. Select the projectors to back up settings for.
2. On the **Control** ribbon, do one of the following:
   - Click **Preferences > Backup**.
   - Click **Channel > Backup**.
3. Browse to where you want to save the backup files and click **OK**.
   Depending on the projector model, files are saved as:
   - channel_projector ID_MAC address-dd-mm-yyyy-hh-mm.chl
   - preferences_projector ID_MAC address-dd-mm-yyyy-hh-mm.tpr
   - channel_projector ID__yyyy_mm_dd_hh_mm.tar
   - preferences_projector ID__yyyy_mm_dd_hh_mm.tar

## 5.2 Restore Projector Channels or Preferences

Projectors must be powered ON to restore channels and preferences.

1. Select the projectors to restore settings for.
2. On the **Control** ribbon, do one of the following:
   - Click **Preferences > Restore**.
   - Click **Channel > Restore**.
3. Browse to and select the backup file to restore.
   Depending on the projector model, files are saved as:
   - channel_projector ID_MAC address-dd-mm-yyyy-hh-mm.chl
   - preferences_projector ID_MAC address-dd-mm-yyyy-hh-mm.tpr
   - channel_projector ID__yyyy_mm_dd_hh_mm.tar
   - preferences_projector ID__yyyy_mm_dd_hh_mm.tar
4. Click **Open**.


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5. When restoring channel definitions, PowerTool prompts you to delete existing channels first:
   - Click **Yes** to clear existing channels. Only the channels in the restore file will remain after the restore operation.
   - Click **No** to keep existing channels. Only the channels that in the restore file are updated. Other channels remain unchanged.

**NOTE:** *If no projectors are found, your router and/or firewall may not be configured correctly. If some projectors are found and others are not, you may have problems with one or more of the following: duplicate IDs or IP addresses, incorrect IP addresses, or incorrect firewall configuration.*

## 5.3 Projector Preferences

**Table 5.1 Projector Preferences**

| | | | | |
|---|---|---|---|---|
| Shutter | 3D Stereo Select Sync | Test Pattern Grey | Focus | Language |
| Picture Mute | 3D Stereo Sync Delay | Freeze Image | Internal Test Pattern | Screen Orientation |
| Onscreen Display | Frame Delay | Level Detector | Select Source | Broadcast Keys |
| Picture-in-Picture | Brightness Uniformity | Color Enable | Select Input | Projector Number |
| Active Projector | Edge Blending | Lamp Message Enable | Source/ Channel Name | Password Enable |
| Auto Setup | Edge Blend Select | Lamp Limit | In Menu | Fan Sensor Enable |
| Size-Position Presets | Select Output Color | Lamp Mode | Source Memory Lock | PIP Border Width |
| Size | Warp Select | Lamp Power | Auto Source | Br. Uniformity Select |
| Vertical Stretch | 2D Keystone Corners | Lamp Intensity | Delete Source | PIP Horizontal Position |
| Pixel Tracking | Warp Prefilter H | Lamp Changed | Baud Rate | PIP Vertical Position |
| Pixel Phase | Warp Prefilter V | Optical Aperture | Baud Rate Secondary | PIP Horizontal State |
| Horizontal Position | Warp Sharpness | LampLOC Module | Projector Number | Blue Odd Gain |


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**Table 5.1 Projector Preferences**

| | | | | |
|---|---|---|---|---|
| Vertical Position | Warp Latency | Lamp Size | Broadcast Keys | Dark Interval |
| Top Blanking | Noise Reduction | White Boost | Network Routing | 3D Stereo Sync Mode |
| Left Blanking | Motion Filter | Color Wheel Delay | Keypad Enable | Auto Power UP |
| Bottom Blanking | Film Mode Threshold | 2nd Color Wheel Delay | Backlight | Slidebar Enable |
| Right Blanking | Ten Bit Processing | Lamp Conditioni ng | Screen Orientation | Error Message Enable |
| Plug & Display Modes | Output Resolution | Lamp Orientation | Keystone | Menu Font |
| Contrast | Output Format | Red Black Level | 2D Keystone H Offset | Lamp Message Enable |
| Brightness | DHDM Loop Thru Setting | Green Black Level | Auto Power Up | Keypad Enable |
| Base Gamma Curve | DHDM Dual Link Format | Blue Black Level | Language | Output Color Default |
| Color | Frame Lock Enable | Red Drive | Source Dialog Enable | 2D Keystone Throw Ratio |
| Tint | Splash Select | Green Drive | Slidebar Enable | Numbers Select Image |
| Detail | LiteLOC Calibration | Blue Drive | Error Message Enable | Splash Select |
| Input Filter | PIP Border Color | Auto Input Levels | Menu Location | Parameter Lockout |
| Copy Comprehensi ve CLR | Image Optimization | Clamping | Menu Shift Horizontal | 2D Keystone V Offset |
| Interpolated Color | Numbers Select Image | Peak Detector | Menu Shift Vertical | Comprehensive Color Adj |
| Color Space | Aspect Ratio Overlay | Red Odd Offset | Menu Font | Gamma |
| Video Standard | Edge Blend Black Levels | Red Odd Gain | Time & Date | Warp Select |
| Chroma/ Luma Delay | Intelligent Lens System | Green Odd Offset | XPort IP | 2D Keystone H Offset |


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**Table 5.1 Projector Preferences**

| | | | | |
|---|---|---|---|---|
| Video Black Level | Lens Calibrate | Green Odd Grain | Lens Vertical Offset | Output Format |
| Zoom | Automatic Gain Control | Blue Odd Offset | Lens Horizontal Offset | 2D Keystone Center |
| Fade Time | Output Resolution | 2D Keystone Zoom | General Input/ Output | PIP Border Color |


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